



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/576,786

04/21/2006

Benoit Fecamp

154548/0341-071

5922

86661

7590

06/28/2010

Potomac Patent Group PLLC

P.O. Box 270

Fredericksburg, VA 22404

EXAMINER

SUERETH, SARAH ELIZABETH

ART UNIT

PAPER NUMBER

3749

NOTIFICATION DATE

DELIVERY MODE

06/28/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

tammy@ppglaw.com

gpo.mail@ge.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/576,786	<b>Applicant(s)</b> FECAMP ET AL.	
	<b>Examiner</b> Sarah Suereth	<b>Art Unit</b> 3749	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 January 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 April 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/15/10&amp;1/18/10</u> .                                     | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. Receipt of applicant's amendment filed on 1/18/10 is acknowledged.

### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the series of temperature sensors must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1 and 15 recite the limitation that an air valve is “configured to fluidly connect” separate areas of the combustion chamber. However, this limitation is indefinite, as it is unclear what the scope of this limitation is. From Figure 1, the valve is located between two sections of the combustion chamber, but it does not connect the two areas together, and it is unclear what this limitation is meant to encompass.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-5,7-13,15,16,19,20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakajima et al (5600948) in view of Maus et al (5428956).
7. Nakajima discloses: an acquisition device/sensor (10,8,7,6,12,9a), an electronic data processor (5) running a control program including a database (col. 5, lines 52-57); a fuel valve (11), an air valve (9), said processor using signals from the sensor(s) to

Art Unit: 3749

regulate the opening of the air and fuel valves (col. 5, lines 14-18). Figure 1 shows both the air and fuel valves fluidly connected to the combustion chamber as claimed.

8. Regarding claims 2-4, the sensors include two temperature sensors (6 and 12)

9. Nakajima, as discussed above, discloses the invention as claimed with the exception of showing two instead of three temperature sensors.

10. Maus shows a similar device including three temperature sensors (4,5 and 6) arranged as claimed inside the combustion chamber (1). Maus shows one embodiment using three sensors (Figure 1), and another embodiment with two sensors (Figure 2). Maus teaches that the additional sensor results in a better temperature reading for the middle of the catalyst (col. 9 lines 4-8).

11. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Nakajima apparatus to include three sets of temperature sensors as shown by Maus, in order to obtain a more accurate catalyst temperature reading (col. 9, lines 4-8).

12. As discussed above in the drawing objection, applicant's Figures appear to show three temperature sensors (60,61 and 62), not three "sets" of sensors.

However, the courts have held that duplication of parts for amplified effect does not distinguish over the prior art, unless a new and unexpected result is produced (In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960) , also MPEP 2144.04).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Nakajima apparatus by inserting a plurality of

Art Unit: 3749

temperature sensors in each location, in order to increase the number of data points obtained.

13. Regarding claims 11-13, Maus shows the three sensors in three areas of the combustion chamber as claimed.

14. Regarding claims 7 and 8, although Nakajima must inherently have a compressor to operate, it is not illustrated in the Figures. One of ordinary skill in the art would know the compressor must be located before the air flow sensor (10), in order to provide the air into the combustion chamber. Also, although Figure 1 does not illustrate the fuel injector being supplied by a fuel duct, it must inherently be connected to a fuel source in order to operate.

15. Regarding claims 9 and 10, it is not inherent that the fuel ducts are arranged as claimed, or that there are multiple fuel ducts.

16. Maus discloses multiple fuel inlets (Figure 1, fuel pump 9 supplies four separate fuel inlets) leading into the combustion chamber (2).

17. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Nakajima apparatus with the multiple fuel ducts as taught by Maus, in order to use a conventional fuel injecting structure.

**18.** Claims 6,14,17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakajima et al (5600948) in view of Maus et al (5428956), further in view of Rostrup-Nielsen (6109018).

19. Regarding claims 6 and 17, Nakajima does not disclose pressure sensors.

Art Unit: 3749

20. Maus discloses that it was known in the art to measure the pressure in the inlet air duct and the exhaust, and to use the differential pressure to regulate the fuel metering (see col. 4 lines 47-65).

21. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Nakajima apparatus to include the pressure measurement taught by Maus, in order to use a conventional method of determining the engine performance (see col. 4 lines 47-65).

22. Nakajima in view of Maus, as discussed above, discloses the invention as claimed with the exception of the outlet of the system leading to a gas turbine.

23. Rostrup-Nielsen discloses a catalytic assembly (34) connected at the exhaust duct to a gas turbine (36) at the outlet, and a compressor (32) at the inlet (Figure 1).

24. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Nakajima apparatus by using the catalyst control system with a gas turbine, in order to use the controller in a known apparatus (see Rostrup-Nielsen paragraph 4).

### ***Response to Arguments***

25. Applicant's arguments filed 1/18/10 have been fully considered but they are not persuasive.

26. Regarding the drawing objection, the examiner notes that claim 5 requires 3 sets of temperature sensors. The examiner agrees that the Figure shows a series of 3 temperature sensors, but it does not show three sets of temperature sensors as recited in claim 5.

Art Unit: 3749

27. Regarding applicant's argument that the prior art does now show a valve fluidly connecting a circuit, as discussed above in the 112 rejection, it is unclear what this limitation means. However, the Nakajima valve allows air to flow through it in fluid communication with the catalyst as claimed.

28. Applicant argues that the Nakajima air valve (9) is not "regulated" by the signal acquisition device. However, the examiner respectfully disagrees. Throttle sensor (9A) provides continuous feedback as to the degree of opening of the valve (col. 5, lines 10-11). Contrary to applicant's arguments, the claims do not require that the controller actually moves the valve, only that its position is regulated by the controller. Because the controller is continuously receiving feedback as to the valve's position, this is regarded as the claimed "regulates an opening of the first valve".

### ***Conclusion***

29. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any



Art Unit: 3749

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

30. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sarah Suereth whose telephone number is (571)272-9061. The examiner can normally be reached on Mondays & Tuesdays 8:00AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve McAllister can be reached on (571) 272-6785. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sarah Suereth/

Examiner, Art Unit 3749

/Steven B. McAllister/

Supervisory Patent Examiner, Art Unit 3749